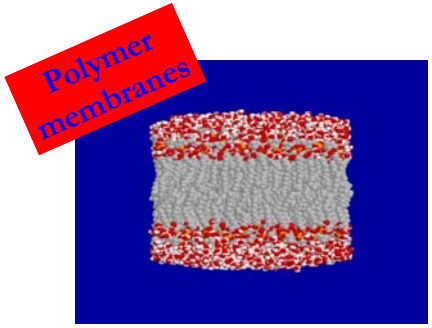
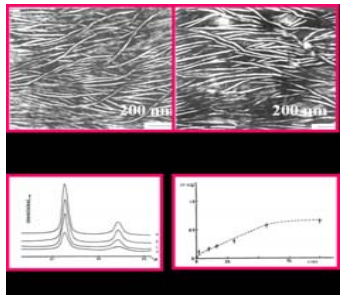
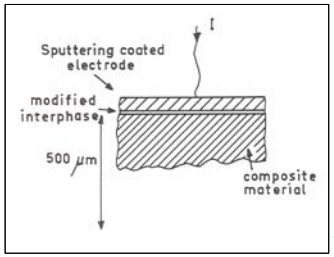
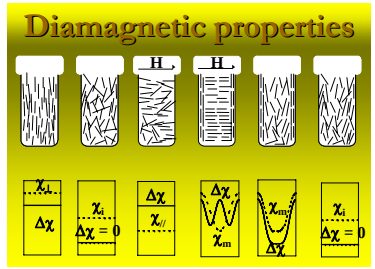


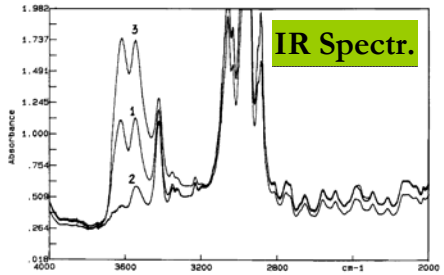
1986



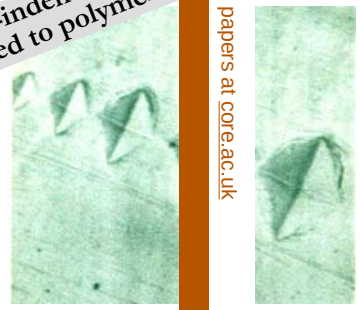


Semiconductors





Micro-indentation har
applied to polymer s

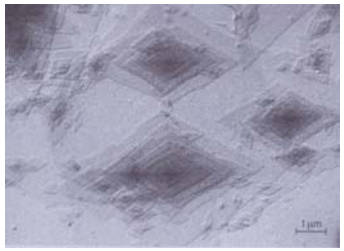


1976 Foundation of the Dep ment

Before 1976: Laboratory of Crys ne Polymers, IQFR

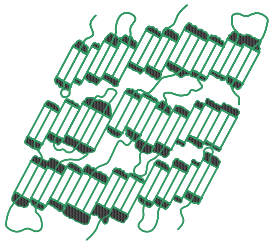
Scientific background

Crystal Morphology



Keller, Univ. Bristol

Deformation processes

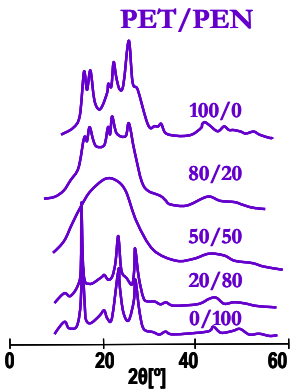


Peterlin, Research Triangle Inst. USA

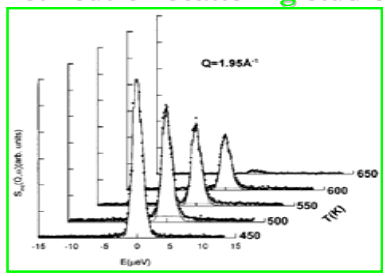
Diffraction theory

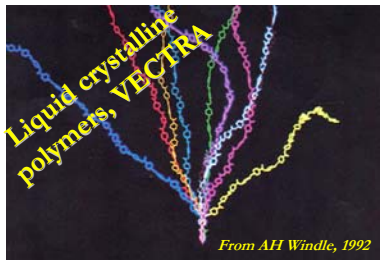
Hosemann, Max Planck Berlin

Crystallization of random copolymers



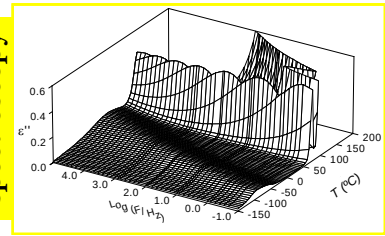
First neutron scattering studies





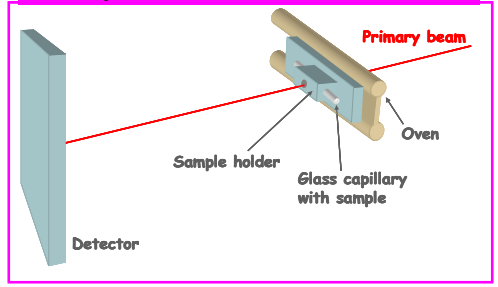
1996

Dielectric spectroscopy

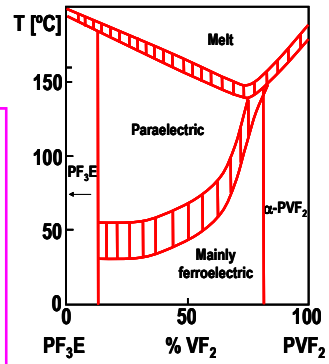


From AM Donald, 1994

First synchrotron radiation studies

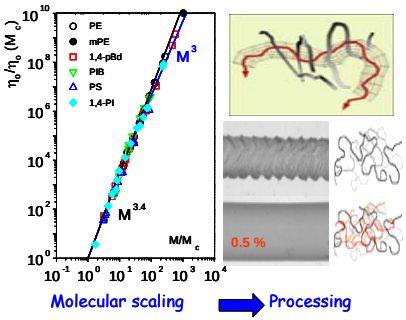


Ferroelectric copolymers



Department of Macromolecular Physics, IEM
The history at a glance: 1976-2006

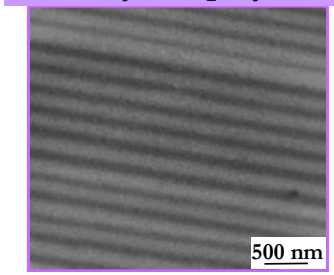
From Reptation to Flow



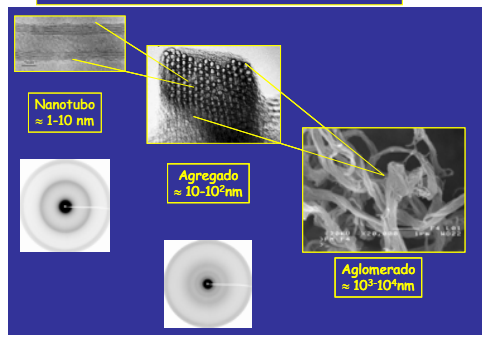
2006

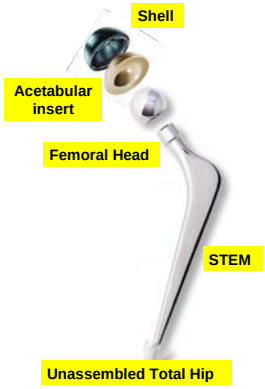
ALBA, sincrotrón español

Nanolayered polymers



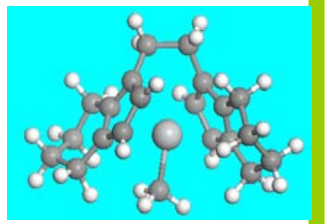
CARBON NANOTUBES



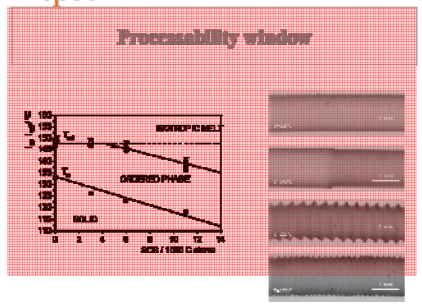


Precursors of crystallization

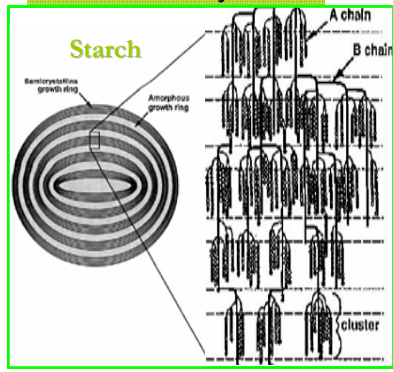
Modelling of synthetic processes



Repsol YPF



Natural Polymers



Polymers for hip prosthesis

LÍNEAS DE INVESTIGACIÓN GENERALES y PERSONAL DEL DEPARTAMENTO DE FÍSICA MACROMOLECULAR

Dinámica y estructura de Materia Condensada Blanda y Polimérica

Dr. Tiberio Ezquerra
Dr. Daniel Rueda
Dra. Amelia Linares
Dra. Aurora Nogales
Dra. Mari Cruz García
D. Jaime Hernández

Propiedades físicas y nanoestructura de polímeros

Prof. FJ Baltá Calleja
Dr. Fernando Ania
Dra. Araceli Flores
Dra. M.E. Cagiao

Estructura molecular y propiedades de polímeros

Prof. J Martínez-Salazar
Dr. Victor Cruz
Dr. Juan F Vega
Dr. F Javier Ramos
Dra. Sandra Martín
Dña.Teresa Expósito
D. Jon Otegui

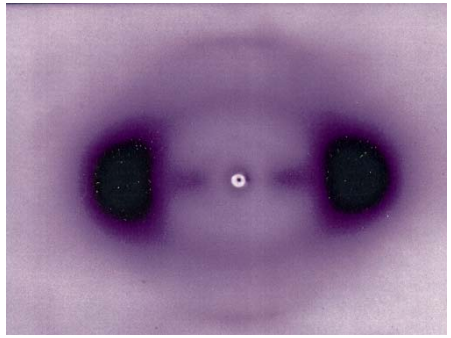
Interfaces

Dra. MJ Capitán (CT)

Personal técnico y de administración:
Dr. José Carlos Canalda
Dña. Ana Montero

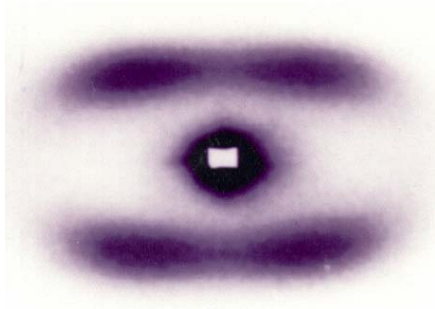
TÉCNICAS EXPERIMENTALES: Estructura

WAXS



Estructura en la escala de 0.1nm

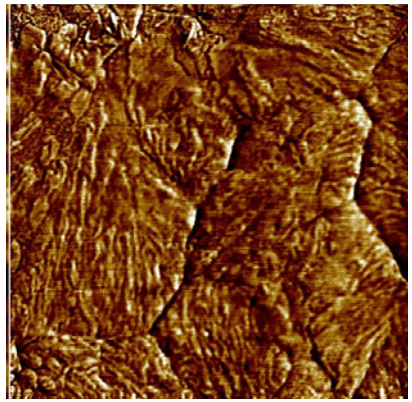
SAXS



Estructura en la escala de 10 de nm

Microscopía:

TEM AFM



Morfología en la escala de 100nm

TÉCNICAS EXPERIMENTALES: Dinámica

Reología

Dinámica molecular

Espectroscopía Dieléctrica y Mecánica

DSC

Transiciones térmicas

TÉCNICAS EXPERIMENTALES: Propiedades

Microdureza

TÉCNICAS EXPERIMENTALES: Simulación

GRANDES INSTALACIONES INTERNACIONALES

Dispersión de rayos X mediante radiación sincrotrón:

DESY

ESRF

BOOKHAVEN

Dispersión de neutrones:

ILL